

AMENDMENTS TO THE CLAIMS

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

The following listing of claims replaces all prior versions and listings of claims in the application:

1. (previously presented) A multiple insertion head for mounting components onto substrates, comprising
 - a carrier arranged such that it can rotate about a rotational axis, and
 - a plurality of receiving tools arranged such that they can be moved in a mounting direction at an angle to the rotational axis ; the receiving tools being arranged on the carrier and arranged so as to receive the components, such that each receiving tool is provided with at least one of an active drive and sensor.
2. (currently amended) The multiple insertion head according to claim 1, wherein each receiving tool comprises its own rotary drive by means of which received components can each be rotated about a tool axis arranged at an angle with respect to a rotational axis of the multiple insertion head.
3. (previously presented) The multiple insertion head according to claim 1, wherein each receiving tool comprises a vacuum generator.
4. (previously presented) The multiple insertion head according to claim 3, wherein the vacuum generator comprises a Venturi tube and the carrier comprises a hollow shaft running coaxially to the rotational axis to which the receiving tools are fitted such that compressed air can be conveyed through the hollow shaft of the carrier to the Venturi tube.
5. (previously presented) The multiple insertion head according to claim 3, wherein the Venturi tube is connected to a regulator to control pressure.

6. (previously presented) The multiple insertion head according to claim 1, further comprising a blast air vacuum device arranged in a receiving mounting position of one of the receiving tools, the vacuum device further arranged such that therein components can be received or mounted by means of the receiving tool located in the receiving mounting position, the receiving tool being connected such that an additional vacuum can be applied or generated to the receiving tools for receiving the components or in addition a blast air impulse while mounting the components in the receiving tool located in the receiving mounting position.

7. (previously presented) The multiple insertion head according to claim 1, wherein each receiving tool comprises a tool shaft embodied as a hollow shaft running coaxially to the tool axis and a rotary sensor arranged so as to detect an angle position of the tool shaft.

8. (previously presented) The multiple insertion head according to claim 7, wherein each tool shaft comprises a vacuum pipette at a distal end range.

9. (previously presented) The multiple insertion head according to claim 1, further comprising a rotationally symmetrical energy and data transmission device arranged between the carrier and a housing of the multiple insertion head, the transmission device arranged such that at least one of active drives and sensors can be supplied with energy and by which the data from the sensors and the data to the sensors can be transmitted with a first transmitter part being permanently fitted to the housing of the multiple insertion head and a second transmitter part being permanently fitted to the carrier in such a way that it can rotate.

10. (previously presented) The multiple insertion head according to claim 9, wherein the transmission device comprises at least one slip ring.

11. (previously presented) The multiple insertion head according to claim 9, wherein the data transmission device comprises one pair of electromagnetic transmitters and one pair of capacitive transmitters arranged rotationally symmetrical around the rotational axis of the multiple insertion head and by means of which there is non-contact transmission of both the energy and the data.

12. (previously presented) The multiple insertion head according to claim 11, wherein the capacitive transmitter comprises a plate-shaped antenna in the first transmitter part and in the second transmitter part, the first transmitter part the electromagnetic transmitter comprises a circular magnetically conductive body with a u-shaped cross section open in the direction of the carrier and a circular magnetically conductive body in the second transmitter part comprising a rectangular cross section which is arranged in such a way in the opening of the first transmitter part that the direction of the magnetic field used for the transmission of energy is at right angles to the direction of the electrical field used for the transmission of data.

13. (previously presented) The multiple insertion head according to claim 9, comprising at least one polished disk arranged on the housing and on the carrier such that the polished disks are arranged immediately next to each other so that compressed air and a vacuum can be applied from external vacuum generators to the active drives of the carrier.

14. (previously presented) The multiple insertion head according to claim 1, wherein the carrier comprises at least one control device arranged so as to control and/or regulate the active drives and/or sensors.

15. (previously presented) The multiple insertion head according to claim 14, wherein the control unit comprises at least one digital signal processor by means of which one or a plurality of the active drives or sensors can be controlled.

16. (previously presented) The multiple insertion head according to claim 1, further comprising a linear motor arranged such that a receiving tool found in the receiving mounting position can be moved in the mounting direction provided that the linear motor is engaged in the receiving tool.

17. (previously presented) The multiple insertion head according to claim 16, further comprising an engaging element provided in each receiving tool so as to engage in an engaging piece of the runner of the linear motor.

18. (previously presented) The multiple insertion head according to claim 16, further comprising an additional retracting means interacting with the linear motor by means of which a runner of the linear motor is pretensioned by means of a spring

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tension against the force of gravity and in which the pretensioning is compensated for by compressed air when the insertion head is in operation.